



Design and Modification of a 4 Stroke Bike using Gobar Gas

Chaandan Phutane¹, Neel Rana², Snehal Vhatkar³, Rajkumar Devkar⁴

¹VIVA Institute of Technology, Mumbai University, INDIA

²VIVA Institute of Technology, Mumbai University, INDIA

³VIVA Institute of Technology, Mumbai University, INDIA

⁴VIVA Institute of Technology, Mumbai University, INDIA

Abstract: — Taking a gander at the exponential development of Pollution we can foresee the fate of the Earth. Infections like asthma, lung disease, skin malignant growth, and so on will be normal. Seeing at the present situation of the oil and its rising value, conventional individual can't stand to spend such a gigantic sum, except if it's a need and not recreation. This undertaking offers a chance to pound every one of the issues. The fix to these issues is to utilize an other fuel which can be condition well disposed, utilizing green gas basically, Gobar Gas. As Gobar gas emanates extremely less contaminations so we can spare the earth from air contamination. From the examination we become more acquainted with that there are numerous wellsprings of contamination, out of which transport has an extreme increment of 1301 tons of contamination which can make our condition increasingly dirtied. In this undertaking we have planned to adjust the picked bike so as it keeps running on an other fuel which is gobar gas. This bike is intended for country area people groups. It is seen that gobar gas creation is more in rustic zones where there are a greater amount of cows ranches. Henceforth, it is anything but difficult to get fuel for this bike at very lower cost. The bike when fuelled with gobar gas delivers enough torque to take up its dead load with a rider, along these lines making it conceivable to have an extremely minimal effort ride. This bike is made for advantageous transportation of an individual starting with one point then onto the next.

Keywords – Alternate fuel, Gobar gas, Low cost bike, Modification of bike.

1. INTRODUCTION

This report contains venture work dependent on structuring and changing a Bike which is worked by a Four Stroke Engine. This bike is structured and adjusted to such a degree, to the point that it might keep running on Gobar Gas.

As we probably am aware, there is a steady increment in utilization of non-inexhaustible fuel (diesel and oil). Henceforth, these wellsprings of vitality can be demolished in future. Additionally high outflow of hurtful gases from the fumes worstly affects condition which prompts an Earth-wide temperature boost. And furthermore everybody knows about the persistent increment in expense of fuel.

These issues can be unraveled by utilizing an other fuel like Gobar Gas. This gas is additionally called as green gas as it is created naturally.

In this venture we are endeavoring to utilize a substitute fuel for a Four Stroke motor bike. The fuel we use is gobar gas which is broken down from dairy animal's excrement.

2. NEED FOR THE DEVELOPMENT

In this day and age, rivalry for the super power is rising, winding up with creation of innovations which are itself hazardous to the entire biological system. The regular increment in contamination given out by businesses and numerous different sources are making an irregularity circumstance to the blue planet Earth and making it into dark planet.

There are numerous sources that give out hurtful contaminations. In any case, in the event that we endeavor to diminish these sources, we can take live longer up to long ages.

In the event that we see the internal combustion motors, generally keep running on powers like gas, diesel, lamp oil, oil, and so forth, which gives out hurtful gas like carbon monoxide, carbon dioxide, sulphur dioxide, NOx, and so on which when in contact with the oxygen and dampness in air ends up unsafe corrosive like sulphuric corrosive, nitric corrosive which causes infections like skin disease, eye visual deficiency, and so forth.

By utilizing a substitute fuel for IC motor which is condition agreeable, we can lessen the previously mentioned issues.

3. PROBLEM STATEMENT

In the wake of looking to the expanding rate of air contamination on the planet and demolition of the non-inexhaustible asset, to support life is getting substantially more troublesome.

The step by step increment in rate of gas and diesel are striking the market. As we probably am aware the entire market is specifically or by implication influenced by the fluctuating rates of petroleum and diesel.

The unsafe poison gasses discharged from the fumes of IC motor likewise contribute a gigantic offer into air contamination.

A typical man can't support in this world with every one of these issues he faces.

4. OBJECTIVE OF STUDY

- Modification of 4-stroke bike so as to replace petrol as a fuel with CH₄ (gobar gas).
- Minimize the cost of overall bike.
- To make bike more efficient with least pollutants as output.

5. PROPOSED METHODOLOGY

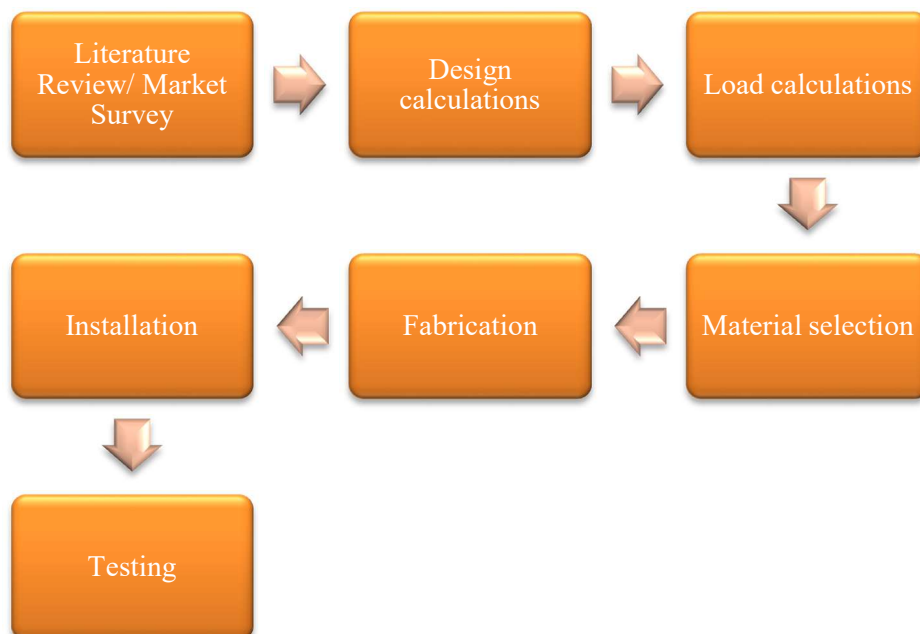


Fig. 5.1 Methodology

5.1 LITERATURE REVIEW

The bike selected is HONDA CD 100, its specification are as follows:

From the literature review we get, {2}

Table 5.1.1: Specification of the chosen bike

QUICK FACTS & SUMMARY	
Body Type	Commuter
ENGINE SPECIFICATIONS	
Engine Description	97cc
Displacement	97 cc
Maximum Power	7.5bhp@8000rpm
Maximum Torque	0.73@5000rpm
DIMENSIONS & WEIGHT	
Overall Length	1885.00 mm
Overall Width	770.00 mm
Overall Height	1060.00 mm
Ground Clearance	135.00 mm
Wheelbase	1235.00 mm
Kerb/Wet Weight	116.00 kg
Fuel Tank Capacity	12.80 litres
SUSPENSION & WHEEL TRAVEL	
Front Suspension	Telescopic hydraulic fork
Rear Suspension	Swing-arm with hydraulic dampers
TYRE SIZE & WHEELS	
Wheel Size	2.50"x18"/2.75"x18"
PERFORMANCE & MILEAGE	
Top Speed	85 kmph
Mileage (Combined)	71 kmpl
BATTERY & ELECTRICALS	
Voltage	12V

5.2 MATERIAL SELECTION

Structure of fuel tank and capacity tank

Material chose is welded mild carbon steel according to BIS measures.

mild carbon steel cylinder {1}

The at present utilized material for LPG cylinder is mild carbon steel .The mild carbon steel cylinder is planned by the Indian Standards (IS 3196).

5.3 FABRICATION

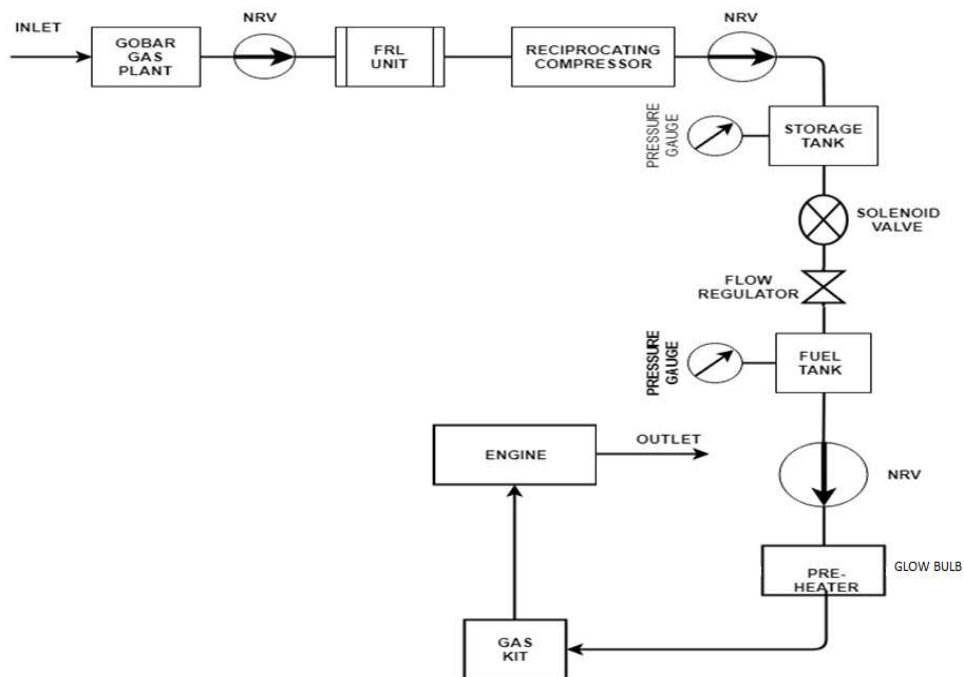


Fig. 5.3.1 Flow chart of the system

5.4 INSTALLATION

Utilizing a legitimate welding framework every one of the backings will be appended, appropriate protection will be given to the tanks so as not to interact with the climatic temperature. Wellbeing measure will be given to the entire framework. Every one of the holes will be check before running the framework.

5.5 TESTING

- Test run the bike with full load condition.
- To contrast watched torque and the determined torque utilizing DYNOTESTING.
- To look at the bike execution when the adjustment check for any unsafe gas discharge (PUC guaranteed).

6. RESULT AND DISCUSSION

Bike chose is HONDA CD-100 (particulars are given above).

The heap conveying limit of the bike after change will be approx. over 140 kgs that will be a rider and a co-rider.

7. CONCLUSION

The bike will keep running on the substitute fuel gobar gas. Subsequently, setting aside extra cash over fuel and furthermore keeping contamination free.

Taking a gander at the literature, a greater amount of the gobar gas is found in the provincial district where a greater amount of disintegrators are found. The ranchers and the general population over yonder use gobar gas as a wellspring of warmth vitality for their every day requirement for cooking. Along these lines they can likewise utilize this gobar gas as the fuel for their vehicle, which will be this bike.

This bike is chiefly made for provincial regions; the generation of gobar gas is more. Subsequently the general population here can undoubtedly bear to buy the bike and the fuel for it.

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Video links of the project

1. https://drive.google.com/file/d/1YVjyDy5V_n9mgtRZSYNh4knsvQ5Y1JUq/view?usp=drivesdk
2. <https://drive.google.com/file/d/1WGVW1j6RSqYbqq8h3BMa1k1JhWb1cyc6/view?usp=drivesdk>
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